GIS Training Opportunity with National Geospatial Intelligence Agency (NGA) College

Laura Muhs, EVBL GIS PM
NAVFAC HQ
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• **NGA** is the nation's primary source of geospatial intelligence, or GEOINT, for the Department of Defense and the U.S. Intelligence Community.

• **NGA** provides GEOINT in support of U.S. national security and defense, as well as disaster relief.

• **GEOINT** is the exploitation and analysis of imagery and geospatial information that describes, assesses and visually depicts physical features and geographically referenced activities on the Earth.

• **NGA College (NGC)** was established to “enable access to the highest-quality learning experts, tools, and solutions for the GEOINT enterprise.”

• **NGC’s teaching strategy** is 30% lecture and 70% guided/practical exercises.

https://www.nga.mil/Pages/Default.aspx
NGA - GIS Training Options

The NGC offers free classroom-based GIS courses to all Federal Government employees.

**NGC Classroom Training -**
Dedicated computer lab classrooms at the NGA HQs (in Springfield, VA or St. Louis, MO) and Extended Learning Sites (in Denver, CO; Honolulu, HI; and Tampa, FL).

- Course offerings for all classes listed on slide 4 available in October for upcoming FY.
- See slides 6, 9, 11, 13, 15, 17 and 18 for class-specific schedules.
- Class availability is first come, first served.
- Only cost to student is travel costs to training location.
- Registration for non-NGA students is via email to the NGC Registrar.
  - Email: NGCRegistrar3@nga.mil
  - Phone: 571-558-2968

**Mobile Training Teams (MTTs) -**
MTTs provide agency-specific training opportunities throughout the country, per agency request.

- Requesting agency responsible for coordinating MTT.
- NGC provides laptops loaded with software and exercises, and two (2) instructors.
- Only cost to requesting agency is student’s travel costs to training location.
- Only GIS 2101 is being offered at NAVFAC-specific sites. See slide 7 for MTT schedule.
- To register or request a MTT, contact Laura Muhs, NAVFAC HQ at laura.muhs@navy.mil or 202-685-9128.
NGA - GIS Curriculum

• Fundamentals of GIS (GIS 2101)
  – OR GIS Equivalency Testing (GIS 2111) (students may try and test out of GIS 2101)
  – See slides 5, 6 & 7 for more information.

• Intermediate GIS for Analysis (GIS 3201)
  – Pre-requisite is GIS 2101 or GIS 2111
  – See slides 8 & 9 for more information.

• Geodatabase Design and Maintenance (GIS 3301)
  – Pre-requisite is GIS 2101 or GIS 2111
  – See slides 10 & 11 for more information.

• Advanced GIS using Models (GIS 4401)
  – Pre-requisite is GIS 3201
  – See slides 12 & 13 for more information.

• Advanced GIS using Scripts (GIS 4411)
  – Pre-requisite is GIS 3201
  – See slides 14 & 15 for more information.

• Geospatial Thinking (CRTH 2130)
  – CRTH 2130 is not part of the NGC GIS curriculum for learning how to use the ArcGIS software.
  – See slides 16 & 17 for more information.

All NGA GIS courses must be taken in sequential order. However, NGA offers an equivalency test to test out of GIS 2101. (See slide 18 for details.)
NGA Classroom and MTT Training

• Course Objectives:
  – Comprehend what Geographic Information Systems (GIS) and geospatial data are.
  – Apply and use the GIS production process.
  – Apply the structure and basic functions of the ArcGIS software suite.
  – Comprehend basic geodesy.
  – Comprehend raster, vector, and text data structure and characteristics.
  – Apply data editing, basic GIS analysis, and product creation.

• Lessons:
  – Lesson 1: GIS Concepts/Intro to ArcGIS 10
  – Lesson 2: Geospatial Data Types (Raster/Vector/Text)
  – Lesson 3: Principles of Geodesy/Projecting Data
  – Lesson 4: Metadata
  – Lesson 5: Creating and Editing Data
  – Lesson 6: Basic Data Analysis
  – Lesson 7: Basic Spatial Analysis
  – Lesson 8: Product Creation
NGA Classroom Course Offerings (FY19):

- October 15-19, 2018  
  NGA College West (St. Louis, MO)  
- October 15-19, 2018  
  NGA College East (Springfield, VA)  
- October 29 – November 2, 2018  
  NGA College East (Springfield, VA)  
- November 26-30, 2018  
  NGA College West (St. Louis, MO)  
- November 26-30, 2018  
  NGA College East (Springfield, VA)  
- November 26-30, 2018  
  ELS Honolulu  
- December 3-7, 2018  
  ELS Molesworth (Adjunct)  
- December 10-14, 2018  
  ELS Denver  
- December 17-21, 2018  
  NGA College East (Springfield, VA)  
- January 7-11, 2019  
  ELS Tampa  
- January 7-11, 2019  
  NGA College West (St. Louis, MO)  
- January 7-11, 2019  
  NGA College East (Springfield, VA)  
- January 28 - February 1, 2019  
  ELS Honolulu  
- February 11-15, 2019  
  NGA College West (St. Louis, MO)  
- February 25 – March 1, 2019  
  NGA College East (Springfield, VA)  
- March 4-8, 2019  
  ELS Tampa  
- March 25-29, 2019  
  NGA College East (Springfield, VA)  
- March 25-29, 2019  
  ELS Honolulu  
- April 8-12, 2019  
  NGA College East (Springfield, VA)  
- April 29 – May 3, 2019  
  NGA College West (St. Louis, MO)  
- April 29 – May 3, 2019  
  NGA College East (Springfield, VA)  
- May 20-24, 2019  
  NGA College East (Springfield, VA)  
- June 10-14, 2019  
  NGA College West (St. Louis, MO)  
- June 10-14, 2019  
  NGA College East (Springfield, VA)  
- July 8-12, 2019  
  NGA College East (Springfield, VA)  
- July 22-26, 2019  
  NGA College West (St. Louis, MO)  
- July 29 – August 2, 2019  
  NGA College East (Springfield, VA)  
- August 19 -23, 2019  
  NGA College East (Springfield, VA)  
- September 9-13, 2019  
  NGA College East (Springfield, VA)  
- September 23-27, 2019  
  NGA College West (St. Louis, MO)
• **What:** Hands-on ArcGIS software training.
  – Introductory classroom training.
  – You don’t have to have any prior experience using ArcGIS software, but you need to know how to use basic Microsoft software, such as Word, Excel and PowerPoint.

• **Who:** Anyone interested in learning how to use ESRI ArcGIS software.

• **Why:** Learn how to apply GIS software to solve spatial management issues.
  – Learn how to perform basic spatial analysis techniques.
  – Learn how to access GIS data stored in a geodatabase.
  – Learn how to use ArcGIS software to review GIS data deliverables from Contractors.

• **Cost:** Training is free. Student must cover travel costs.

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**MTT Course Offerings (FY19):**

1. Naval Base Kitsap-Bremerton, WA (15-19 Oct 2018)*
   - **FULL**

2. NAS Jacksonville, FL (3-7 Dec 2018)*

3. Naval Base Guam (14-18 Jan 2019)*
   - **FULL**

4. NGA Extended Learning Site Honolulu, HI (11-15 Feb 2019)** - **FULL**

5. San Diego, CA (25-29 March 2019)*

6. Naval Station Norfolk, VA (8-12 April 2019)*

*Class size limited to 24 people.

**Class size limited to 12 people.

Additional MTTs for FY19 3rd and 4th quarters are being tentatively planned for NAVFAC NW, NAVFAC Marianas, and NAVFAC MidLant (in the Northeast).

**How to Register:** Contact Laura Muhs, NAVFAC HQ, at [laura.muhs@navy.mil](mailto:laura.muhs@navy.mil) or 202-685-9128.
NGA Classroom Training

• Course Objectives:
  – Prepare geospatial data for exploitation.
  – Analyze geospatial problems using intermediate-level analysis concepts, functions and tools.
  – Modify geoprocesses using intermediate-level GIS utilities.

• Lessons:
  – Lesson 1: Fundamentals Refresher
  – Lesson 2: Managing Data with a Geodatabase
  – Lesson 3: Geocoding
  – Lesson 4: Geostatistical Analysis
  – Lesson 5: Network Analysis
  – Lesson 6: Raster Analysis
  – Lesson 7: Introduction to Models
  – Lesson 8: Introduction to Scripts
## Intermediate GIS for Analysis (GIS 3201)

### NGA Classroom Course Offerings (FY19):

<table>
<thead>
<tr>
<th>Date Range</th>
<th>Location</th>
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<tbody>
<tr>
<td>October 22-26, 2018</td>
<td>NCE College Classrooms (Springfield, VA)</td>
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<tr>
<td>October 22-26, 2018</td>
<td>NCW-Building 36 (St. Louis, MO)</td>
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<tr>
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<td>August 12-16, 2019</td>
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<td>August 12-16, 2019</td>
<td>NCW-Building 36 (St. Louis, MO)</td>
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<tr>
<td>September 16-20, 2019</td>
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NGA Classroom Training

- **Course Objectives:**
  - Develop basic data elements in a geodatabase.
  - Employ advanced data elements in a geodatabase.
  - Manage a geodatabase using behaviors and administrative techniques.

- **Lessons:**
  - Lesson 1: The Geodatabase
  - Lesson 2: Basic Elements
  - Lesson 3: Domains & Subtypes
  - Lesson 4: Topological Elements
  - Lesson 5: Terrain Datasets
  - Lesson 6: Cartographic Elements
  - Lesson 7: Geodatabase Management
### Geodatabase Design and Maintenance Course (GIS 3301)

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NGA Classroom Training

• **Course Objectives:**
  – Analyze and troubleshoot a model.
  – Create a flowchart to apply to an analytical problem.
  – Create a model.
  – Share an automated workflow.

• **Lessons:**
  – Lesson 1: Flowcharting
  – Lesson 2: Building a Model
  – Lesson 3: Analyzing Models
  – Lesson 4: Sharing an Automated Workflow
NGA Classroom Course Offerings (FY19):

- November 13-16, 2018  NCE College Classrooms (Springfield, VA)
- December 17-20, 2018  NCW-Building 36 (St. Louis, MO)
- March 4-7, 2019       ELS Denver
- March 12-15, 2019     NCE College Classrooms (Springfield, VA)
- May 13-16, 2019       NCW-Building 36 (St. Louis, MO)
- August 12-15, 2019    NCE College Classrooms (Springfield, VA)
NGA Classroom Training

• **Course Objectives:**
  – Build a basic script using Python scripting language (syntax).
  – Validate script using Python syntax.
  – Customize geoprocessing tools to run a Python script.
  – Create control statements and messages to account for exceptions in a script.

• **Lessons:**
  – Lesson 1: Introduction to Python
  – Lesson 2: Scripting in ArcGIS
  – Lesson 3: Creating Python-based Geoprocessing Tools
  – Lesson 4: Accounting for Exceptions in a Script
NGA Classroom Course Offerings (FY19):

- **September 17-21, 2018**: NCE College Classrooms (Springfield, VA)
- **September 24-28, 2018**: NCW-Building 36 (St. Louis, MO)
- **December 10-14, 2018**: NCE College Classrooms (Springfield, VA)
- **January 28 – February 1, 2019**: NCW-Building 36 (St. Louis, MO)
- **January 28 – February 1, 2019**: ELS Tampa
- **March 18-22, 2019**: NCE College Classrooms (Springfield, VA)
- **June 24-28, 2019**: NCE College Classrooms (Springfield, VA)
- **July 8-12, 2019**: NCW-Building 36 (St. Louis, MO)
- **September 23-27, 2019**: NCE College Classrooms (Springfield, VA)
NGA Classroom Training

• Course Objectives:
  – Describe the importance of spatial thinking to GEOINT.
  – Explain the relationship between GEOINT tools and spatial thinking.
  – Define scientific methods.
  – Discern spatial bias and spatial error in GEOINT products.
  – Deconstruct intelligence products using spatial thinking techniques.

• Lessons:
  – Lesson 1: The Concept of Space
  – Lesson 2: Applying Tools of Representation to Spatial Thinking
  – Lesson 3: Using the Scientific Method to Solve Spatial Problems
  – Lesson 4: Spatial Thinking Biases and Pitfalls

Note: CRTH 2130 is not part of the NGC GIS curriculum for learning how to use the ArcGIS software.
NGA Classroom Course Offerings (FY19):

- November 5-7, 2018: NCE College Classrooms (Springfield, VA)
- January 14-16, 2019: NCW-Building 36 (St. Louis, MO)
- January 14-16, 2019: ELS Molesworth
- March 4-6, 2019: NCE College Classrooms (Springfield, VA)
- July 22-24, 2019: NCW-Building 36 (St. Louis, MO)
- August 5-7, 2019: NCE College Classrooms (Springfield, VA)
- September 11-13, 2019: NCE College Classrooms (Springfield, VA)
The Equivalency Test can be taken in place of GIS 2101. Requires previous knowledge of ArcGIS software. The test is ONLY offered at an NGA classroom.

**NGA Classroom Course Offerings (FY19):**

- October 10, 2018        NCE College Classrooms (Springfield, VA)
- October 11, 2018        NCW-Building 36 (St. Louis, MO)
- November 19, 2018       NCE College Classrooms (Springfield, VA)
- December 11, 2018       NCW-Building 36 (St. Louis, MO)
- January 24, 2019        NCE College Classrooms (Springfield, VA)
- February 20, 2019       NCW-Building 36 (St. Louis, MO)
- March 6, 2019           NCE College Classrooms (Springfield, VA)
- April 9, 2019           NCW-Building 36 (St. Louis, MO)
- May 14, 2019            NCE College Classrooms (Springfield, VA)
- June 5, 2019            NCW-Building 36 (St. Louis, MO)
- July 1, 2019            NCE College Classrooms (Springfield, VA)
- July 17, 2019           NCW-Building 36 (St. Louis, MO)
- September 5, 2019       NCE College Classrooms (Springfield, VA)
FOR MORE INFORMATION

Contact Laura Muhs, NAVFAC HQ
Laura.muhs@navy.mil
202-685-9128